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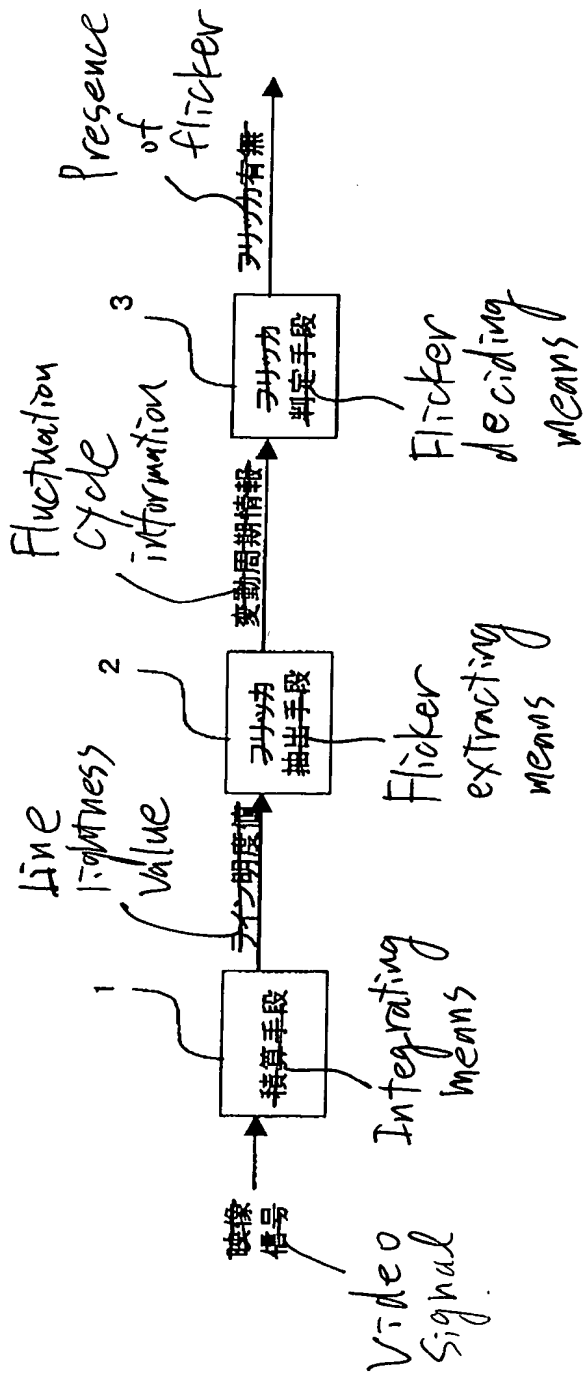


Fig. 1

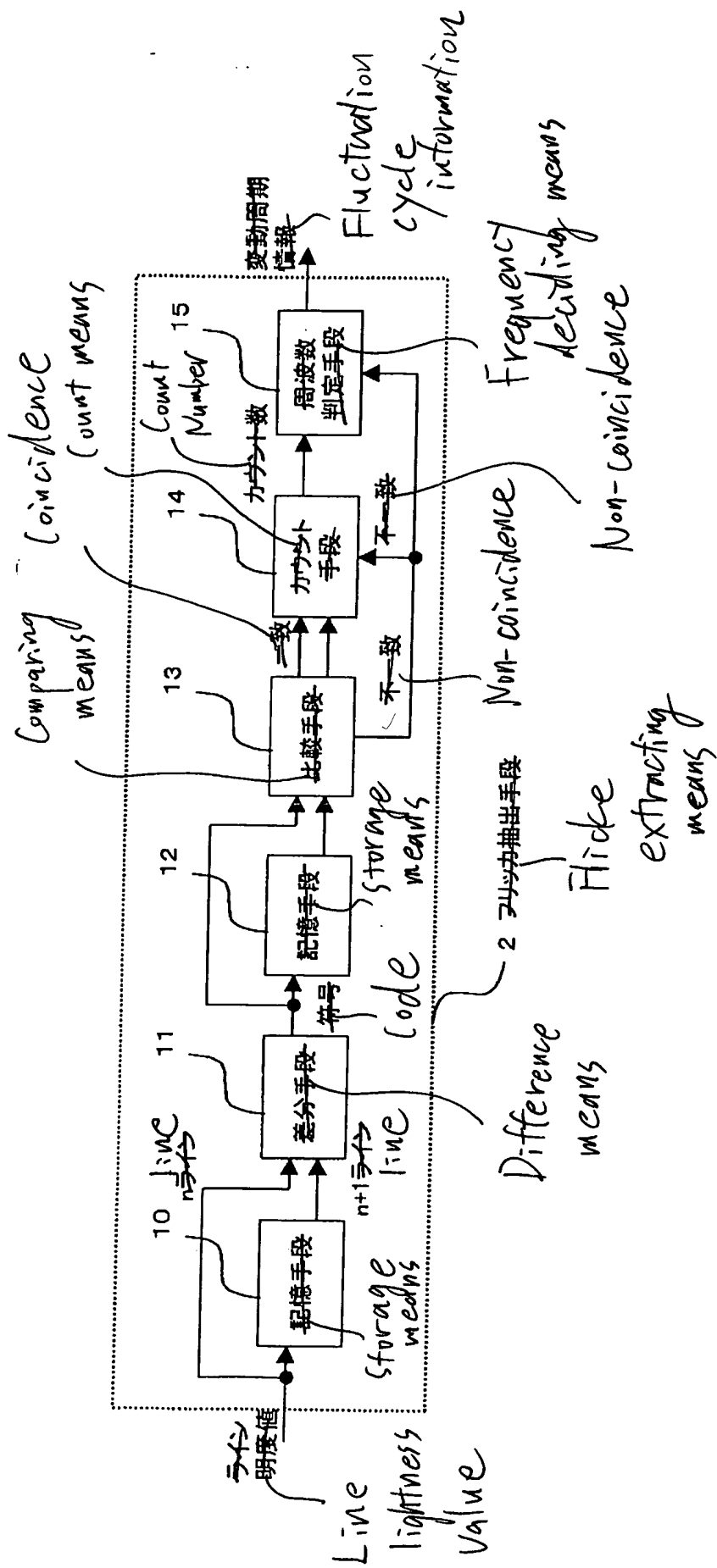
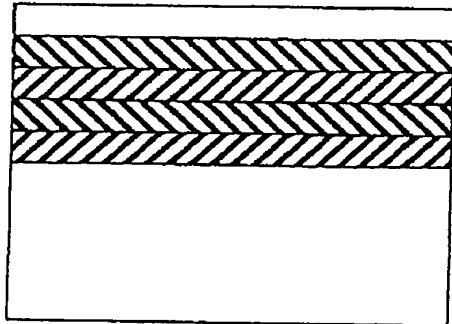


Fig. 2

Fig. 3



積算手段 1 による積算

line  
 n-1ライン SUMn-1  
 nライン line SUM  
 n+1ライン SUMn+1  
 n+2ライン SUMn+2  
 line

Integration by  
 integrating means

Fig. 4

One cycle of  
 frequency component  
 周波数成分の1周期

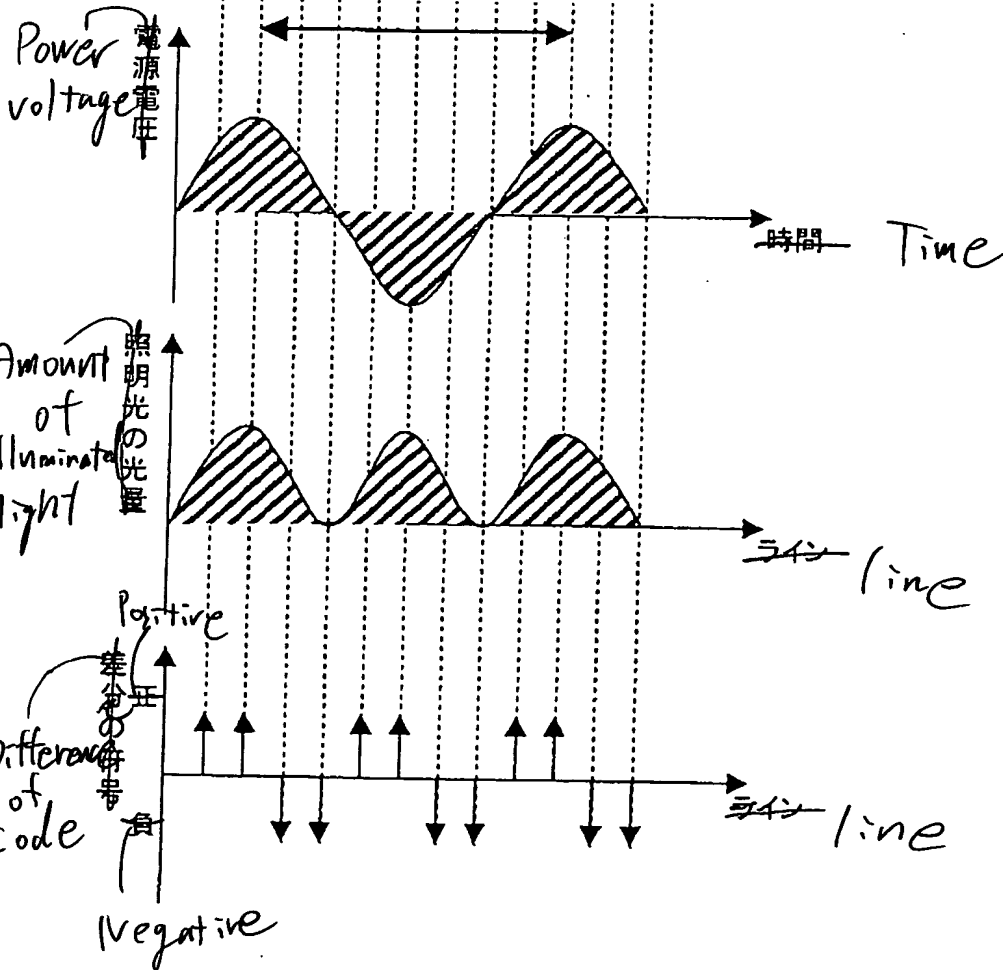
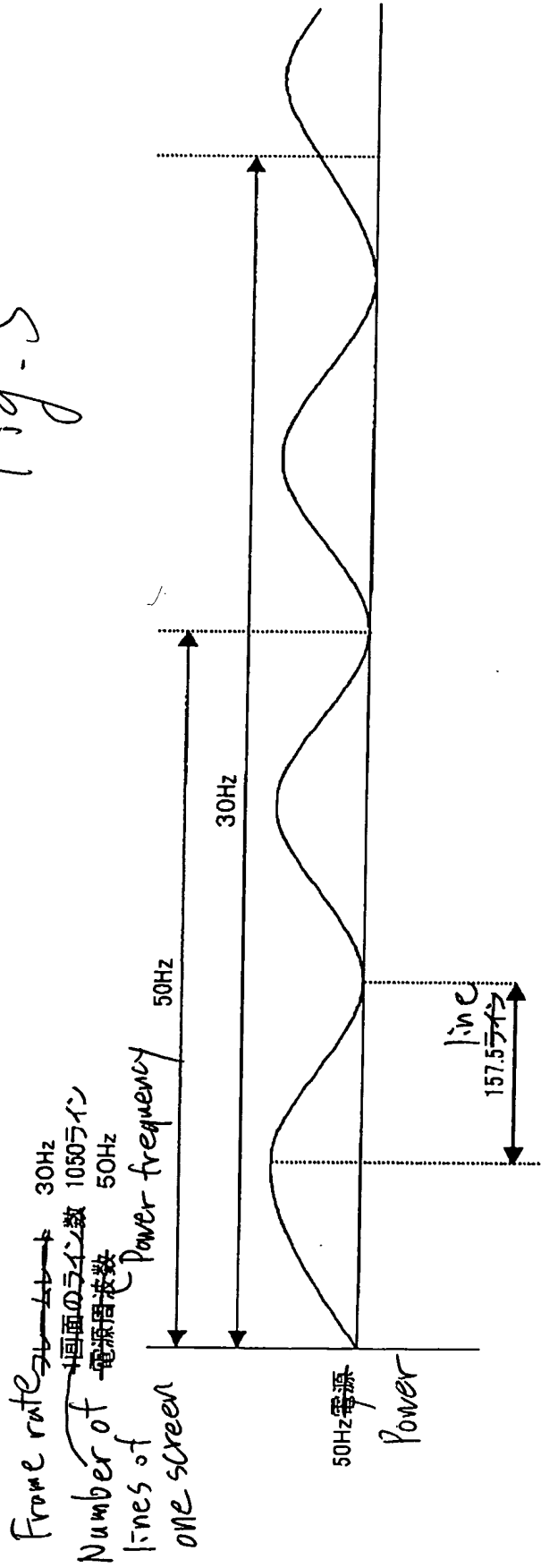


Fig-5



Frame rate

Horizontal synchronizing frequency

Number of lines

Horizontal synchronizing frequency

Flicker cycle

Horizontal synchronizing frequency

Flicker cycle

Horizontal synchronizing frequency

Flicker cycle

Number of code change points for one cycle  $\times$  Power frequency

Fig. 6

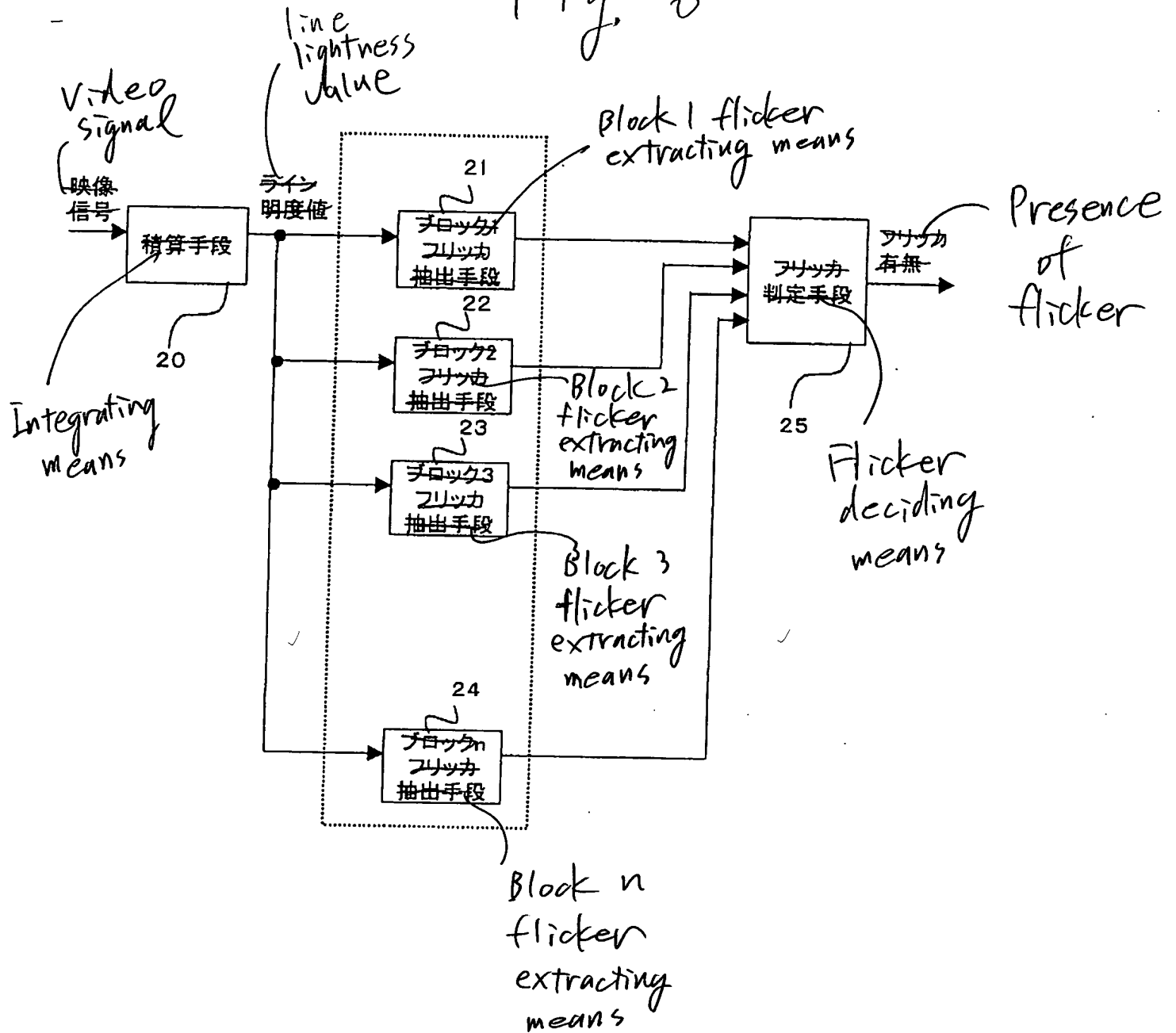
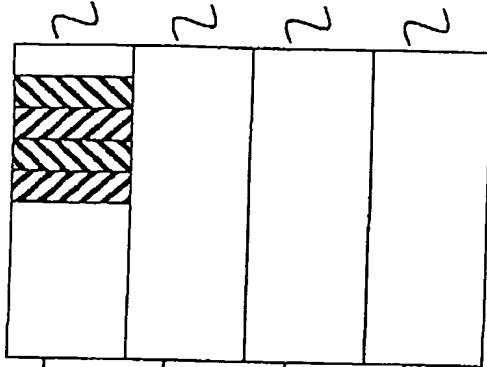


Fig. 7

Block1 Block2 Block3 Block4  
 ブロック1 ブロック2 ブロック3 ブロック4



Block1 flicker  
 extracting  
 means

ブロック1  
 フリッカ  
 抽出手段

Fluctuation cycle information  
 変動周期情報

Block2 flicker  
 extracting  
 means

ブロック2  
 フリッカ  
 抽出手段

Fluctuation cycle information  
 変動周期情報

Block3 flicker  
 extracting  
 means

ブロック3  
 フリッカ  
 抽出手段

Fluctuation cycle information  
 変動周期情報

Block4 flicker  
 extracting  
 means

ブロック4  
 フリッカ  
 抽出手段

Fluctuation cycle information  
 変動周期情報

Ideal integrated value  
with flicker

No ideal waveform due  
to luminance component  
of image

フリッカのあるときの  
理想的な積分値

画像の輝度成分により  
理想波形にはならない

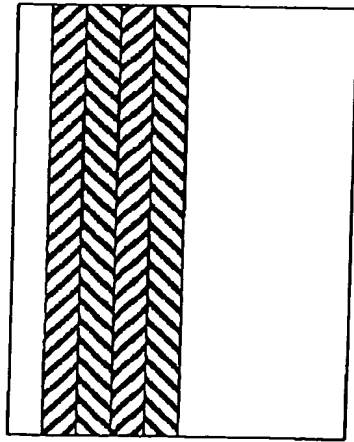
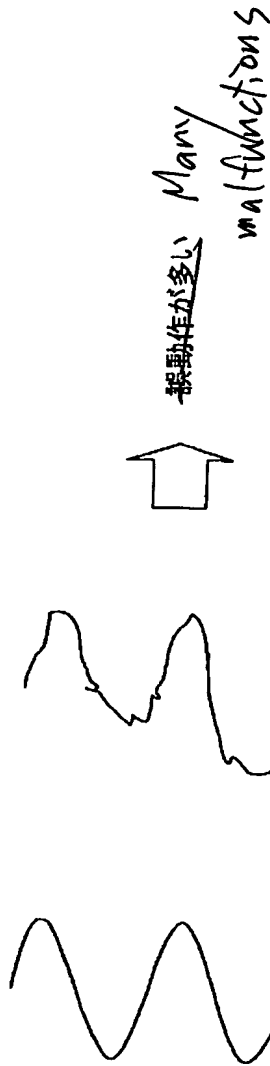


Fig. 8A



振動が多い Many  
malfunctions

Block 1 Block 2 Block 3 Block 4  
フリッカフリッカフリッカフリッカ

Block 1 Block 2 Block 3 Block 4  
フリッカフリッカフリッカフリッカ

Ideal  
waveform

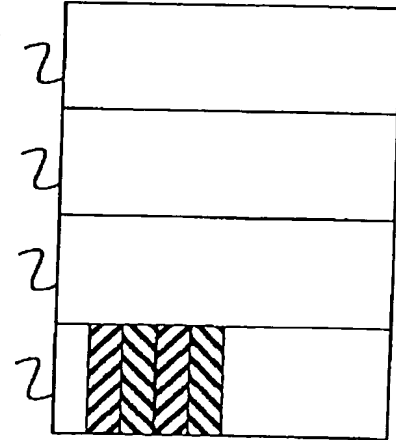
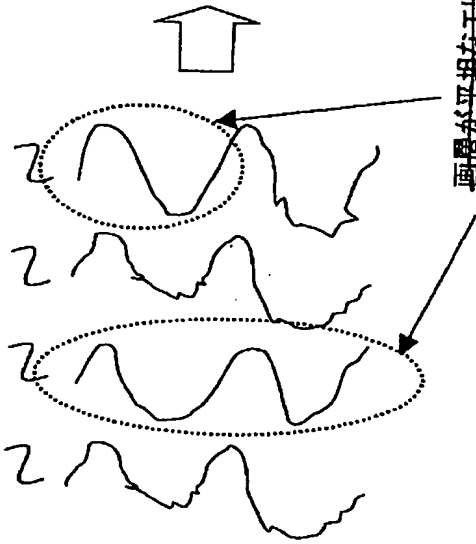


Fig. 8B



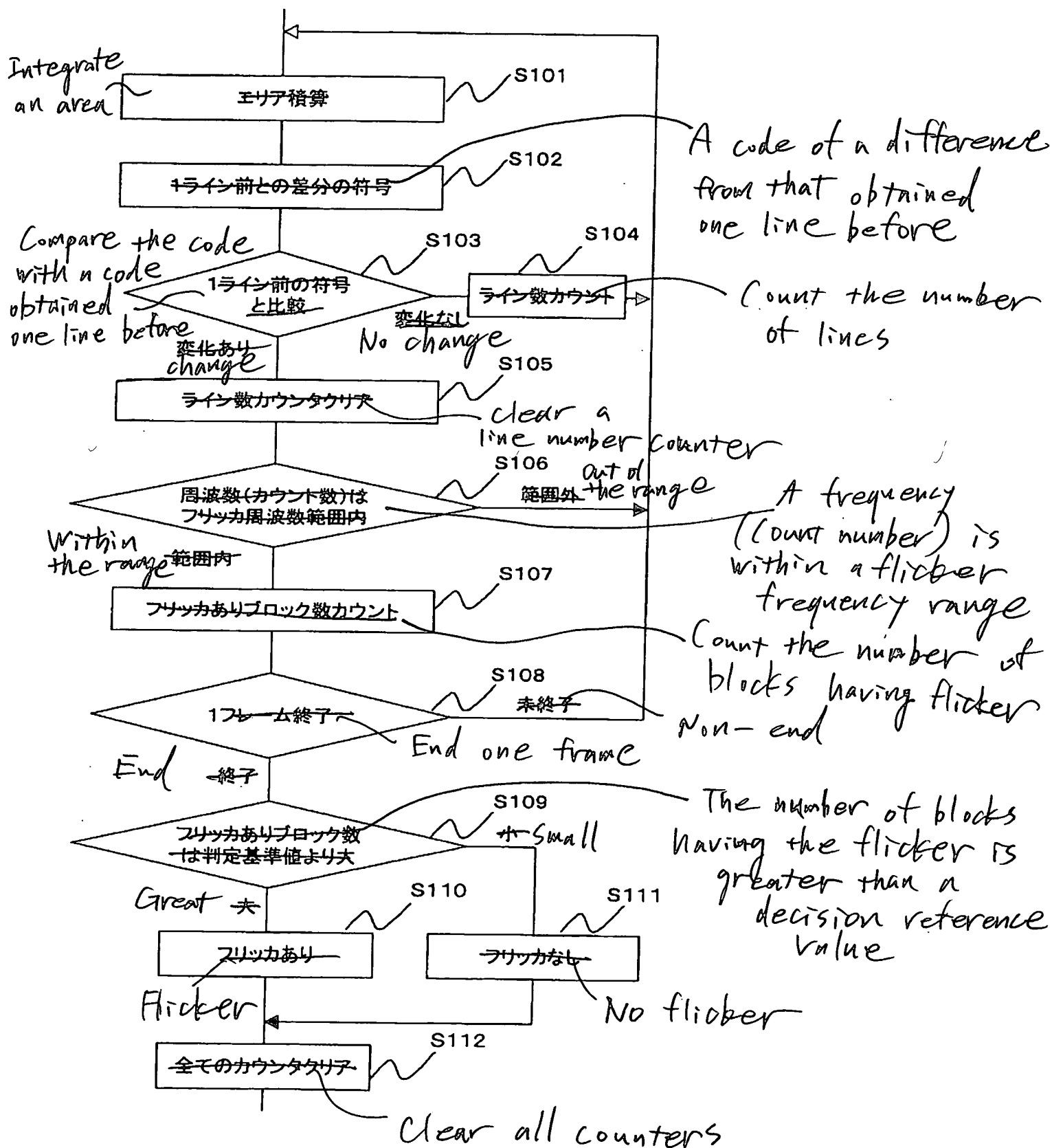
画層が平坦なエリア

Area having  
flat image layer

By the division of a block, a flicker  
decision is made in an area having a  
flat image (a small change in a  
luminance component) to decrease  
a malfunction.



Fig. 9



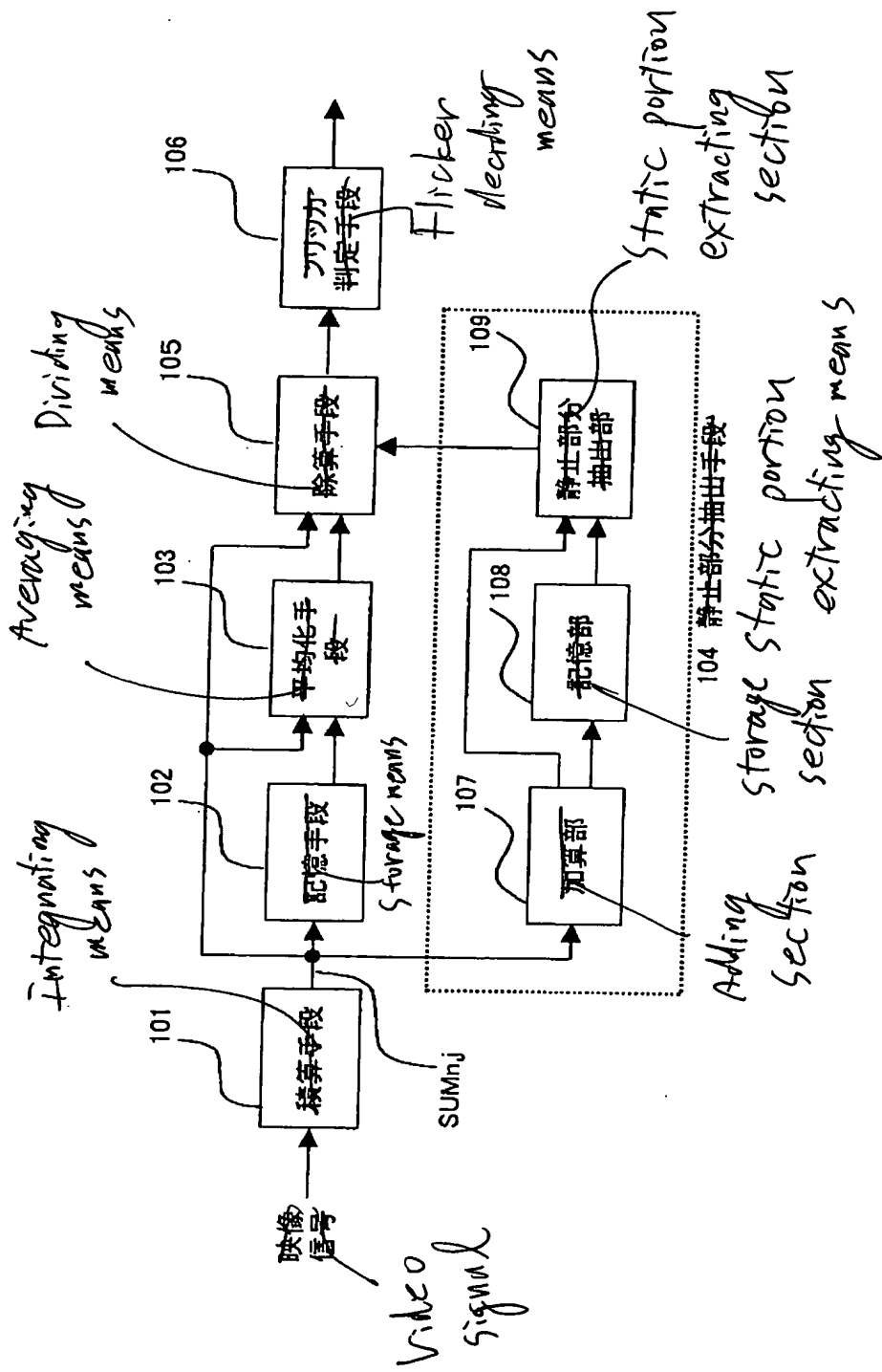
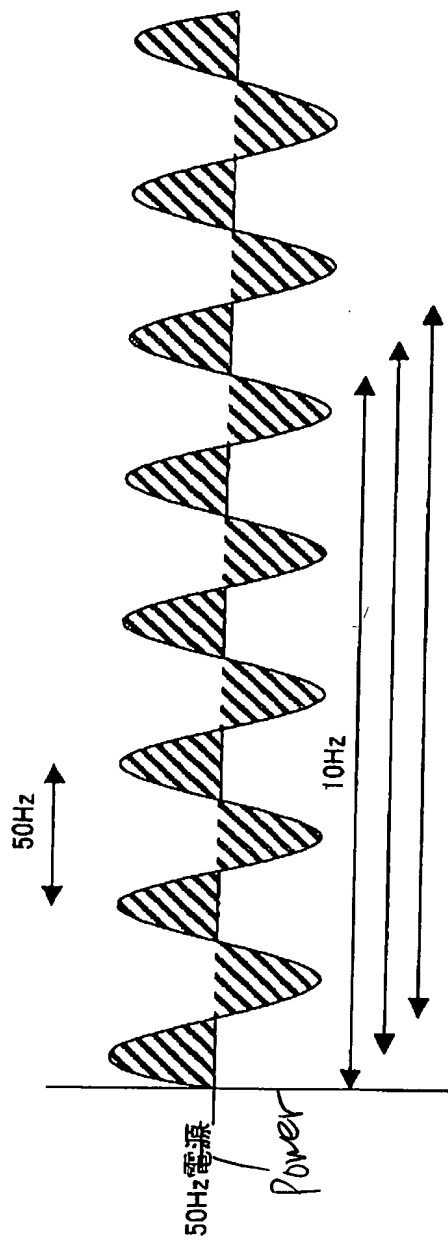


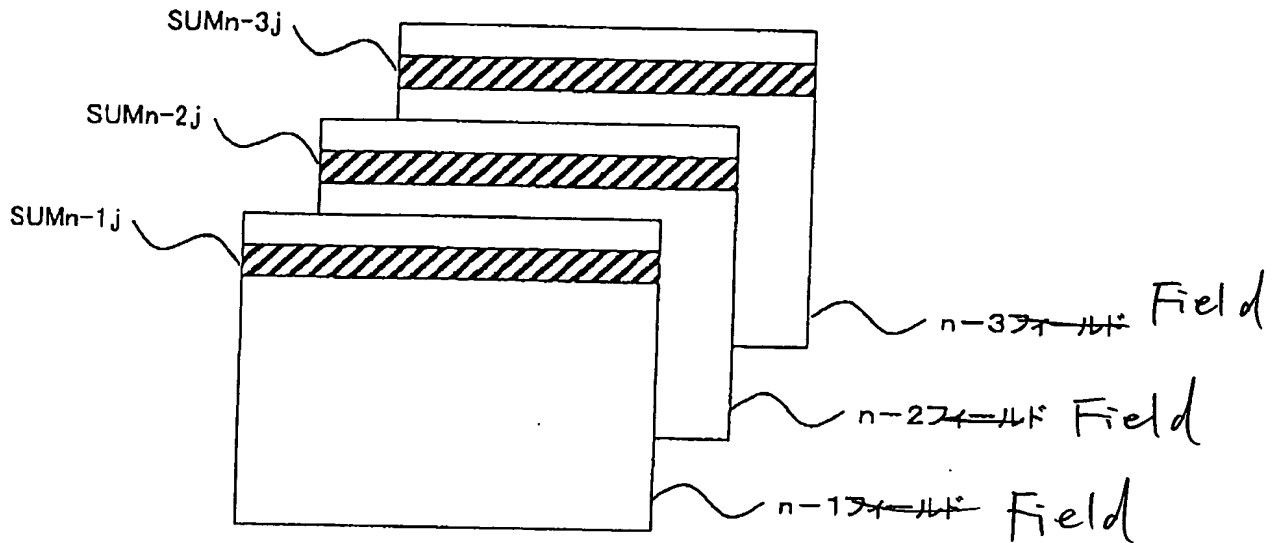
Fig. 10



In the case in which a frame rate is 30Hz at a power of 50Hz, an integration of three frames (10Hz) is equivalent irrespective of the sampling in any timing. Therefore, it is possible to remove a flicker component by the integration of three fields.

Fig. 11

Fig. 12



A signal obtained by averaging a predetermined area corresponding to a plurality of frames (three frames in a conventional example) has no flicker component.

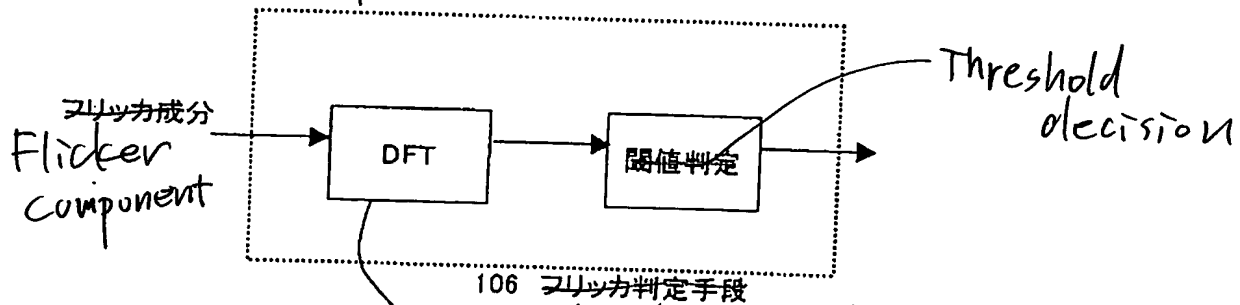
$$AVE_{nj} = (SUM_{n-1j} + SUM_{n-2j} + SUM_{n-3j}) / 3$$

# Fig. 13

Divide an integrated value in a predetermined area by an average value between frames, thereby extracting a flicker component

$$\text{フリッカ成分} = \text{SUM}_{n-1j} / \text{AVEN}_j$$

Flicker component



DFT  
(Discrete  
Fourier  
Transform)

~~DFT (離散フーリエ変換)~~  $X(\omega) = 1/2\pi \int x(t) e^{-j\omega t} dt$   
~~DFT変換テーブル~~ または  
 or

DFT conversion table